

**DRAFT**  
**ENVIRONMENTAL ASSESSMENT**

**MISSISSIPPI RIVER LEVEES CONSTRUCTION PROJECT**

**GAMMON, ARKANSAS**  
**LANDSIDE SEEPAGE BERM EXTENSION**

**INTRODUCTION**

The U.S. Army Corps of Engineers, Memphis District, has prepared this environmental assessment (EA) to evaluate potential impacts associated with extending an existing landside seepage berm along the Mississippi River mainline levee. This EA was prepared because seepage problems at Gammon, Arkansas, were not anticipated when the Mississippi River Mainline Levees Enlargement and Seepage Control Supplemental Environmental Impact Statement (SEIS) was completed in July 1998. The proposed work is located near Gammon in Crittenden County, Arkansas. A project map and construction plans are included in the Appendix.

This EA is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as interpreted by the U.S. Army Corps of Engineers Regulation ER-200-2-2, and employs a systematic, interdisciplinary approach. The following sections include a discussion of the need, authority, and impacts of alternative plans on natural and cultural resources associated with the proposed action.

**PROJECT DESCRIPTION**

The work consists of extending the existing landside seepage berm for approximately 1.3 miles between levee miles 138/00+00 and 139/20+00 along the Mississippi River mainline levee. Fill material would be obtained from one to two borrow pits located riverside of the levee. If sufficient suitable material is available from the area labeled Borrow Pit 1 on the map, then no other material would be required. However, if this pit does not contain an adequate amount of suitable material, material would be obtained from the area labeled Borrow Pit 2 on the project map. Impacts have been assessed based on the assumption that both pits would be utilized during project construction. Two existing stop log culvert structures would be replaced, and two more stop log culvert structures would be constructed along the seepage berm to provide drainage.

Approximately 40,000 cubic yards of soil would be required in order to construct the berm. Only Borrow Pit 1 (2.95 acres) will be used if it contains material suitable to construct the berm. If it does not, then Borrow Pit 2 (4.3 acres) would be used. Borrow pit excavation would be approximately eight to ten feet in depth with 1V:3H side slopes.

## **NEED FOR ACTION**

The seepage berm is needed to control the seepage that occurs during flood conditions on the Mississippi River and to assure that the levee system is safe from a project flood event. Seepage could undermine the levee if unabated. Some sand boils are already present in the project area landside of the levee.

## **PROJECT AUTHORITY**

The Flood Control Act of 1928, as amended, authorizes this project.

## **ALTERNATIVES**

There were three alternatives considered for this project.

*Alternative 1: No Action:* The no-action alternative is defined as termination of the project. Continued seepage during flood conditions would keep carrying sands and silts under the levee causing additional sand boils. This could eventually lead to levee failure during a major flood event. Failure of the levee would result in property damage and could cause human injuries and/or loss of life.

*Alternative 2: Install Relief Wells to Reduce Landside Seepage Pressures:* This alternative would involve installing relief wells along the landside of the Mississippi River Levee.

*Alternative 3: Installing a Landside Seepage Berm Extension:* This alternative would consist of extending the existing seepage berm on the landside toe of the levee to block seep water from flowing underneath the levee.

After careful consideration of all alternatives, it was determined that Alternative 1 (no action) was unacceptable. Alternative 2 (relief wells) was costly and would require construction of additional drainage. It could also cause flooding with the area. Therefore, Alternative 3 was selected as the preferred plan.

## **FLOODPLAIN MANAGEMENT**

The proposed borrow areas are located within the Mississippi River floodplain. Extending the existing seepage berm to control seepage pressures must be done at this site to maintain the integrity of the levee. Borrow cannot be excavated from landside of the levee because this could initiate the development of sand boils. Therefore, there is no practical alternative to obtaining borrow from the floodplain.

## **HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)**

A record search was conducted by Corps personnel through the EPA EnviroMapper Web Page (<http://maps.epa.gov>). The EPA search engine did not indicate any superfund sites, toxic releases, or hazardous waste sites within, or directly adjacent to the project site. A site inspection was conducted on April 13, 2006, and no evidence of potential or present HTRW problems was found.

Based upon a check of the EPA Web Page and the site inspection, it is reasonable to assume that no hazardous, toxic or radioactive waste will be encountered within the project area. No additional HTRW investigations are recommended. No other analysis is required unless new information is revealed or HTRW is discovered during construction.

## **ENVIRONMENTAL SETTING**

### **Location**

The proposed seepage control project is located in Crittenden County, Arkansas, in northeast Arkansas. The seepage berm would extend along the landside of the Mississippi River mainline levee between levee miles 138/0+00 and 139/20+00 in the vicinity of Gammon, Arkansas (see project map and construction plans in appendix). This item of work is approximately 1.3 miles long. Fill material will be obtained from the borrow pit(s) located riverside of the levee and placed in low-lying areas on the landside of the levee as outlined in the construction plans contained in the appendix.

### **Climate**

Crittenden County has a moderate climate. Summertime high temperatures in the 90s (degrees Fahrenheit), whereas the average wintertime lows are in the 40s (degrees Fahrenheit). The average annual precipitation is approximately 50 inches.

### **Soils**

The major soil association of the project area is of the Mhoon series. These are poorly drained, level soils on the lower parts of young natural levees. These soils formed in stratified beds of predominantly loamy sediments. The areas in the vicinity of the potential borrow pits are already classified as borrow pits.

## **SIGNIFICANT RESOURCES AND IMPACTS**

### **Agricultural Lands**

The project was coordinated with the Natural Resources Conservation Service (NRCS) in Marion, Arkansas. The borrow areas have been farmed recently; however, these areas are not registered as farmland with the NRCS. Therefore, no significant impacts to prime and unique farmland and/or prior converted or farmed wetlands would occur as a result of this project.

### **Vegetation**

The berm extension would be constructed along the existing fence line on the landside of the mainline levee. The Right-of-Way (ROW) in this area is owned by the levee district. Most of the area in the vicinity of the berm is grazed by cattle. Along the fence line for approximately 1,000 feet is a strip of trees composed of cottonwood, hackberry, and American elm. This row of trees was estimated to be less than 0.5 acres because it is only one tree wide. These trees would be removed during construction of the water berm.

The borrow areas are located on the riverside of the levee approximately 2 miles from the berm site. These areas were farmed recently, so they are already cleared. No vegetation would be disturbed.

### **Wildlife Resources**

Wildlife that could be expected to inhabit the project area include coyotes, deer, raccoons, opossums, rabbits, muskrats, shrews, songbirds, turtles, snakes, amphibians, and other small animals typically found along the Mississippi River levee. Project-induced impacts to wildlife are expected to be minimal due to the limited construction area, nature of the proposed construction, and lack of extensive habitat in the project area.

### **Aquatic Habitat**

Fish use the riverside portion of the project area as spawning habitat when it is flooded, and it is likely that fish, especially game fish would colonize the borrow area. No significant adverse impacts to fish should occur as a result of the project.

### **Endangered Species**

Corps of Engineers biologists conducted an endangered species survey of the project area on April 13, 2006. No endangered or threatened species, or critical habitats, were found at the project location. This project is being coordinated with the U.S. Fish and Wildlife Service.

## **Cultural Resources**

In 1995, a cultural resources survey was conducted by Mid-Continental Research Associates. The survey reach was along 3.5 miles of the existing Gammon berm. The proposed project is located within this area. Four archeological sites were recorded, three (3CT327, 3CT326, and 3CT329) of which are historic, postdating 1900 and not considered significant. The fourth site (3CT326) has prehistoric and historic components and is considered potentially significant. It is not located within the project area and therefore, would not be impacted by the proposed project. The Arkansas State Historic Preservation Officer (SHPO) and concerned Federally recognized American Indian tribes were informed of the project. The SHPO responded that no historic properties would be affected by the project. A copy of the Public Notice and this draft EA will be sent to the SHPO and concerned Federally recognized tribes for their review and comments.

Should deeply buried artifacts or other site indicators be uncovered during construction, the Memphis District Staff Archeologist, Arkansas State Historic Preservation Office, and Federally recognized tribes will be immediately notified to ensure compliance with all Federal and state laws and regulations.

## **Wetlands**

There will be no deposition of material into any wetlands or other waters of the U.S. Thus, a section 404(b)(1) evaluation and water quality certification are not required. There are some wetland areas along the riverside of the levee, but they would not be impacted by the proposed project.

## **Air Quality**

The area is in attainment for all air quality standards. Since the equipment to be used is a mobile source, the project is exempt from air quality permitting requirements. Although air emissions will not require a permit, best management practices shall be used throughout the construction to minimize air pollution.

## **Water Quality**

No significant impacts to water quality would occur as a result of the project. No fill material would be placed in wetlands or other waters of the U.S. Water quality certification would not be required.

## **CUMULATIVE EFFECTS**

The cumulative effects of the overall Mississippi River Levee project are thoroughly discussed in the 1998 SEIS. This project is a minor extension to an existing berm. Therefore, there would be no significant cumulative impacts for this specific project in addition to those disclosed in the 1998 SEIS.

**Table 1. Relationship of Plan to Environmental Laws and Regulations**

The relationships of the recommended plan to the requirements of environmental laws, executive orders, and other policies are presented below:

<u>Federal Policies and Acts</u>	<u>Compliance Status</u>
Archaeological Resources Protection Act of 1979	2*
Bald Eagle Act	1
Clean Air Act Amendments of 1977	1
Clean Water Act of 1977, as amended	1
Endangered Species Act of 1973, as amended	2
Farmland Protection Policy Act of 1984	1
Fish and Wildlife Coordination Act of 1958	2
Flood Control Act of 1946, as amended	1
Food Security Act of 1985	1
National Environmental Policy Act of 1969	2
National Historic Preservation Act of 1966, as amended	2*
River and Harbor and Flood Control Act of 1970	1
Water Resources Development Act of 1986	1
Water Resources Planning Act of 1965	1
<u>Executive Orders</u>	
Floodplain Management (E.O. 11988)	1
Protection, Enhancement of the Cultural Environment (E.O. 11593)	1
Protection of Wetlands (E.O. 11990)	1
<u>Other Federal Policies</u>	
Prime and Unique Farmlands (CEQ Memo, 1976)	1
Water Resources Council, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies	1

1/ Full compliance with the policy and related regulations has been accomplished.

2/ Partial compliance with the policy and related regulations has been accomplished.

\* Consultation is ongoing; should remains be encountered, full compliance with policy and related regulations will be accomplished.

## **COORDINATION**

Arkansas Department of Environmental Quality, Water Division, Little Rock, Arkansas  
U.S. Department of the Interior, U.S. Fish and Wildlife Service, Conway, Arkansas  
U.S. Department of Agriculture, Natural Resources Conservation Service, Crittenden County,  
Marion, Arkansas  
Arkansas State Historic Preservation Officer, Little Rock, Arkansas

## **RELATED ENVIRONMENTAL DOCUMENTATION/REFERENCES**

U.S. Army Corps of Engineers, Environmental Desk Reference (IWR) Report 96-PS-3), Institute for Water Resources Policy and Special Studies Division, July 1996.

U.S. Army Corps of Engineers, Mississippi River Mainline Levees Enlargement and Seepage Control Supplemental Environmental Impact Statement, July 1998.

U.S. Department of Agriculture, Soil Conservation Service. 1974. Soil Survey of Crittenden County, Arkansas.

U.S. Department of Agriculture, Food Security Act.

## **CONCLUSION**

This office has assessed the environmental impacts of the proposed action and has determined that the proposed work will have no significant impacts upon vegetation, fish, wildlife, cultural resources, or the human environment.

## **PREPARER**

For additional information contact Leighann Gipson at (901) 544-4015 or Mike Thron at (901) 544-0708.

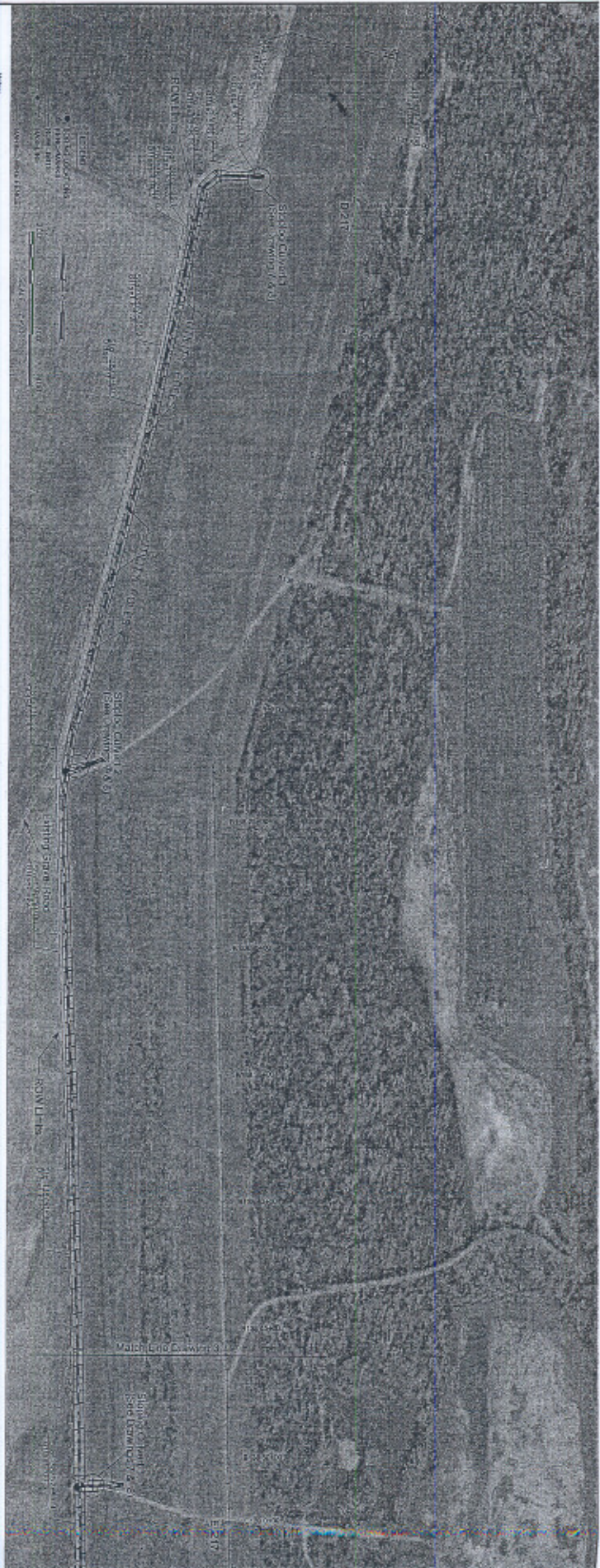
## **APPENDIX**

Figure 1. Vicinity and Site Map

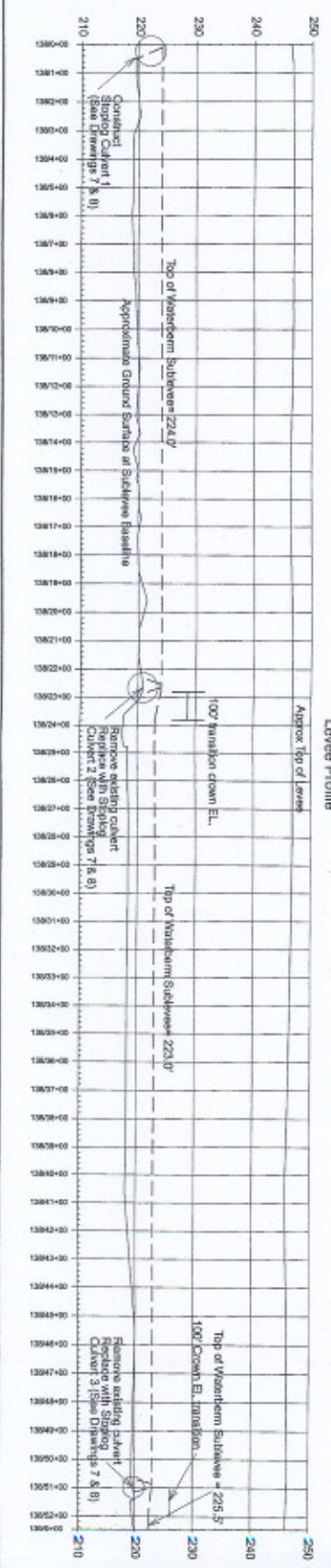
Figure 2. Schematic Engineering Plan Drawings

# Gammon, Arkansas Seepage Berm

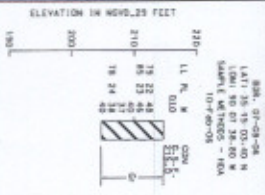




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TYPICAL BORROW PIT SECTION  
(Approximate Station 141/17+00)  
HOR. SCALE - 1" = 100'  
VER. SCALE - 1" = 20'

BORROW PIT PROFILE A-A'  
HOR. SCALE - 1" = 100'  
VER. SCALE - 1" = 20'